REMARKS

Reconsideration of the application in light of the following remarks is respectfully requested.

Status of the Claims

Claims 1-24 are pending. Reconsideration of the rejections is respectfully requested.

Allowable Subject Matter

Applicants thank the Examiner for allowing claims 3-8 and 11.

Rejections Under 35 U.S.C. §103(a)

Claims 1, 14, 23 and 24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,209,018 to Ben-Shachar et al. ("Ben-Shachar") in view of U.S. Patent No. 6,606,643 to Emens et al. ("Emens"). Claims 2 and 9 stand rejected as being unpatentable over Ben-Shachar in view of Emens and "JR (Java Reflective Broker)." Claims 10, 12 and 13 stand rejected as being unpatentable over Ben-Shachar in view of Emens and Arno. Claims 15 and 16 stand rejected as being unpatentable over Ben-Shachar in view of Emens; U.S. Patent No. 5,675,795 to Rawson et al. ("Rawson") and U.S. Patent No. 5,452,447 to Nelson et al. ("Nelson"). Claim 17 stands rejected as being unpatentable over Ben-Shachar in view of Emens, Rawson and JR (Java Reflective Broker). Claims 18 and 19 stand rejected as unpatentable over Ben-Shachar in view of Emens, Rawson, Nelson and Arno. Additionally, claims 20 and 21 stand rejected as being unpatentable over Ben-Shachar in view of Emens, Rawson, Nelson and U.S. Patent No. 5,742,759 to Nessett et al. ("Nessett").

With respect to claim 1, the Examiner contends that Ben-Shachar discloses all of the features of claim 1, except permitting the client to communicate with the server associated with the selected object reference which was forwarded to the client's binding table. However, the examiner contends that Emens teaches such a step.

Applicants respectfully traverse the above rejection. Ben-Shachar and Emens, alone or in combination, do not teach or suggest all of the features of claim 1.

Applicants previously amended independent claims 1 and 15 to emphasize the transparent feature of the invention, specifically calling for the steps of "establishing name service clusters for the object servers which each contain a unique object binding table that contains object server references [and] in response to a request from a client that invokes a cluster, performing a load balance by having the name service select an object server located in the invoked cluster." Additionally, the applicants amended the claims to specifically state that "... the fault tolerance, the load balance and the failover are performed transparently". Neither Ben-Shachar nor Emens, alone or in combination, teach or suggest the notion of transparency, and instead explicitly violate the technical advance which is part of the present invention.

The present invention discloses performing load balancing, fault tolerance and failover transparently through the use of the CORBA Name Service. Specifically load balancing, fault tolerance and failover are carried out within the constraints of the existing CORBA communication pattern. There are no changes to the communication patterns or services, and no changes to the user, client or server codes. By introducing the notion of transparency, the present invention, expressly and purposely constrains itself to the existing CORBA communication pattern and does not allow for introduction of new communication models, structures or methods. The same is not true of either Ben-Shachar or Emens. Ben-Shachar requires changes to the services used in the system, and both Ben-Shachar and Emens requires changes to the client and server codes in addition to the functionality prescribed by the standard. Furthermore, Emens does not utilize CORBA, and therefore is neither bound nor constrained by it. Therefore, neither Ben-Shachar nor Emens teach or suggest performing fault tolerance, load balancing and failover of CORBA object servers transparently.

The Examiner cites Col. 10, lines 3-7 and Col. 11, lines 60-63 to demonstrate that Ben-Shachar discloses performing fault tolerance, load balancing and failover transparently. However, Ben-Shachar is incapable of performing such functions transparently because instead of embedding the functionality of performing the fault tolerance, load balancing and failover into CORBA's existing communication pattern, via the Name Service, Ben-Shachar builds a system on top of the existing CORBA infrastructure. Ben-Shachar specifically requires additional

infrastructure and services above and beyond the CORBA standard. Such an act automatically highlights the lack of transparency because transparency expressly prohibits awareness to a user, which is inescapable once features are added to any standard.

Under the present invention, once an object reference is located, a notion of a cluster is introduced in the implementation of the Name Service. Such enables load balancing based on multiple object references binding under the same name in the Name Service. The Name Service is a standard CORBA infrastructure that most customers are already using. In contrast, Ben-Shachar eliminates the standard CORBA Name Service and replaces it with a self created Service Locator, which automatically requires the participants to change their existing communication patterns to enable the load balancing and fault tolerance. For instance, as previously noted, instead of the client talking to the Name Service to obtain an object reference of the server as is the norm, the client of Ben-Shachar must now talk to a service locator, create a service, allocate a server and then obtain that server. This technique of requiring additional infrastructure, i.e. running the Service Locator and/or Service Manager to enable the load balancing and the fault tolerance, creates noticeable changes to a user, preventing the performance of the functions in a transparent manner. Therefore, clustering inside the Name Service, as in the present invention, is not comparable to clustering inside the Service Locator of Ben-Shachar, because now changes to communication patterns/services or user/client/server code are not only possible, but are inescapable.

Ben-Shachar not only fails to disclose the notion of transparency but specifically teaches away from it. Ben-Shachar's requirements of building or changing a system to make it load balance or fault tolerance aware simply classifies Ben-Shachar as intrusive rather than transparent. Ben-Shachar's requirement of the service proxy, service locator, service object and worker all cooperating with each other as part of a close knit framework make it impossible to perform the load balance and fault tolerance where a CORBA client and server are both unaware of the framework. Since the entire system must be built on the framework Ben-Shachar established, load balancing and fault tolerance cannot possibly be performed transparently.

With respect to claim 15, 23 and 24, applicants repeat the above arguments and submit that they define over the prior art for the reasons stated above regarding claim 1.

With respect to dependant claims 2, 9, 10, 12-14 and 16-24, applicant submit that these claims depend directly or indirectly from the independent claims discussed above and should be allowed at least for the same reasons discussed for their respective base claims and in view of their own further recitations.

Conclusion

Each and every point raised in the Office Action dated September 7, 2005 has been addressed on the basis of the above amendments and remarks. In view of the foregoing it is believed that claims 1-2, 9,10 and 12-24 are in condition for allowance and it is respectfully requested that the application be reconsidered and that all pending claims be allowed and the case passed to issue.

       If there are any other issues remaining which the Examiner believes could be resolved through a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned at the telephone number indicated below.

Dated: June 3, 2005   Respectfully submitted,
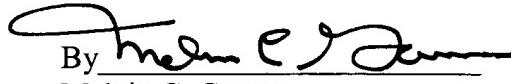
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